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INSURANCE SPECIAL REPORT

A-31

The Effect of Vehicle Component Parts Marking on Theft Losses

Highway Loss Data Institute

Insurance Special Report
A-31

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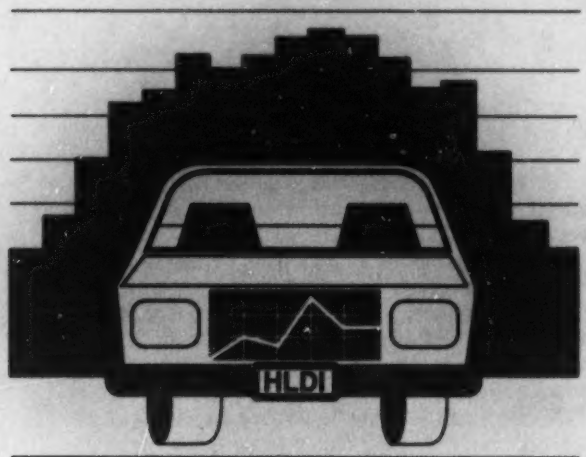

SUMMARY

This Highway Loss Data Institute special report compares the theft loss experience of cars designated as high theft car lines subject to the parts marking provisions of the Motor Vehicle Theft Law Enforcement Act of 1984 with results for cars not so designated. Under this law, cars designated as high theft lines must mark major parts with the vehicle identification numbers (VIN). This is intended to reduce the incidence of thefts of cars for disassembly and sale of their body parts. In addition to overall results, data for cars garaged in metropolitan areas of over 1,000,000 population and for cars garaged outside of these metropolitan areas are presented. Parts marking was initially introduced with the 1987 models; data for 1986-88 models are included for comparison purposes.

Principal Findings

Overall Results

- Overall theft claim frequencies declined for both parts-marked cars and nonmarked cars beginning with the 1987 models, but the decline was greater for cars with parts marking.
- The decline in theft claim frequency for parts-marked cars was only for theft claims less than $10,000; the frequency of theft claims greater than $10,000 did not decline for these cars.
- The average theft loss payment increased for parts-marked cars.
- For cars with parts-marking, the average loss payment per insured vehicle year declined from the 1986 to the 1988 model year. This decline occurred because the drop in theft claim frequencies more than offset the increase in average loss payments per claim.

Vehicles In Large Metropolitan Areas

- Claim frequencies for both groups of automobiles were more than 50 percent higher in large urban areas than overall. The decline in theft frequencies for the parts-marked cars was greater in the urban areas than overall.
- For 1988 models, the theft frequency of parts-marked cars was substantially below that of the cars without parts marking.
- Average loss payments per theft claim for parts-marked vehicles increased by more than one-third over the three model years.
- The average loss payment per insured vehicle year changed little for cars without parts marking, but this measure declined for the parts-marked cars.

Vehicles Outside Large Metropolitan Areas

- Claim frequencies were substantially below the overall results for both parts-marked and on marked car lines.
- The parts-marked vehicles registered declines and the nonmarked lines increased in theft claim frequency from 1986 to 1988 models.
- The average loss payment per insured vehicle year increased for car lines without parts marking. Results were mixed for car lines with parts marking.

Conclusion

The results of this study suggest that the marking of vehicle parts with identification numbers may have reduced the incidence of thefts of such cars, especially in large urban areas where car theft is common.

INTRODUCTION

The Highway Loss Data Institute (HLDI) is a nonprofit, public service organization that gathers, processes, and publishes insurance data concerning the human and economic losses associated with owning and operating motor vehicles.

In an attempt to reduce the incidence of motor vehicle theft, Congress passed the Motor Vehicle Theft Law Enforcement Act of 1984, which directed the National Highway Traffic Safety Administration (NHTSA) to identify certain motor vehicle lines as high theft lines. NHTSA made this determination based on available theft rate data. Beginning with the 1987 model year, automobile manufacturers were required to place vehicle identification numbers on the major component parts of cars in the designated high theft lines. The identification numbers must be inscribed directly on the part or appear on labels that leave an outline or other indication if removed. Both original and replacement parts are marked.

The vehicle parts required to be marked with identification numbers, and which constitute the major source of illegal activities in "chop-shops," where stolen vehicles are disassembled for the value of their parts, include:

- Engine;
- Transmission;
- All doors;
- Hood;
- Front and rear bumpers;
- Front fenders;
- Rear deck lid;
- Both rear quarter panels.

The Act exempted from the parts-marking provision high theft car lines that were equipped with certain types of antitheft devices as standard equipment. A list of the individual vehicle series included in the parts-marked group is given in Appendix A-1, and those exempted from the standard are given in Appendix A-2. Definitions are provided in Appendix B.

This report describes the theft loss experience, under comprehensive insurance coverage, of 1986 and 1987 models during their first two years of availability and of 1988 models during their initial year of availability. Data are presented for the high-theft car lines covered by the parts-marking provision of the Act. For comparison, data for cars not designated as high theft and therefore not subject to the parts-marking provisions of the law are also included. In addition to the overall theft results, data are presented for vehicles garaged in large metropolitan areas and vehicles garaged outside large metropolitan areas. This report is based on comprehensive coverage and theft loss data supplied by 13 insurers: Aetna, Allstate, Fireman's Fund, GEICO, Kemper, Liberty Mutual, Nationwide, Prudential, Safeco, Sentry, State Farm, Travelers, and USAA.

It should be noted that the results presented in this report include the complete spectrum of theft losses occurring under comprehensive coverage, ranging from the theft of items from the vehicle to the theft of the vehicle itself.

It is intended that the dissemination of this and other HLDI reports will contribute to research into ways of reducing crash damage, crash injuries, and theft losses, and that it will also inform the public about differences in the loss experience produced by different kinds of vehicles.

RESULTS AND DISCUSSION

Overall Results

Table 1 presents data on theft claim frequencies (per 1,000 insured vehicle years), average loss payments per claim, average loss payments per insured vehicle year, and vehicle years of exposure for 1986-88 models by year of availability. The car lines with parts marking are listed in Appendix A-1. The cars without parts marking are those car lines not defined as high-theft by NHTSA and that had no major redesign during the 1986-88 model years. Car lines that underwent major redesigns were excluded, as HLDI data have previously identified significant changes in the frequency of theft claims for newly redesigned models.

Theft Claim Frequency

During their first year of availability both the 1987 car lines with parts marking and those not subject to parts marking experienced similar declines in theft claim frequencies compared to the 1986 models in their first year of availability. However, during the second year, the parts-marked car lines registered much larger declines than did the nonmarked cars. For the first year of availability for the 1988 models compared to the 1986 models, the parts-marked car lines registered a decline of almost 30 percent in theft claim frequencies compared to an 11 percent decline for the nonmarked car lines. Furthermore, the theft claim frequency of the 1988 model parts-marked car lines was virtually the same as for nonmarked lines.

Table 1

Overall Theft Results: 1986-88 Vehicle Series Subject to Parts Marking and Not Subject to Parts Marking By Year of Availability

	Cars Without Parts Marking			Cars With Parts Marking*		
	1986	1987	1988	1986	1987	1988
Claim Frequency						
Year 1	10.0	9.1	8.9	12.6	11.5	9.0
Year 2	9.6	9.2		12.4	10.7	
Average Loss Payment ($)						
Year 1	1,568	1,535	1,626	2,760	2,821	3,057
Year 2	1,502	1,543		2,495	2,796	
Average Loss ($) Payment Per Insured Vehicle Year						
Year 1	16	14	14	35	32	27
Year 2	14	14		31	30	
Vehicle Years Of Exposure (in 1,000s)						
Year 1	909	986	1,066	451	427	600
Year 2	2,334	2,810		1,273	1,347	

* Parts-marking began with the 1987 models.

Results are standardized to the following distribution: Theft coverage with no deductible amount, 5 percent youthful operators and 50 percent no-youthful operators; for coverage with a deductible amount, 5 percent youthful operators and 40 percent no-youthful operators.

Average Loss Payment Per Claim

Although theft claims for the parts-marked car lines were not as frequent as for their earlier unmarked counterparts, the size of those claims increased dramatically. Parts-marked 1987 car lines experienced an increase in average loss payments per claim during their first year of availability at the same time as the nonmarked car lines registered a slight decrease. For the 1988 models compared to the 1986 models, both groups registered increases in the average loss payment per claim, with the marked car lines up over 10 percent and the nonmarked car lines up by less than 4 percent. For 1988 models in their first year, the average loss payment per claim for parts-marked cars was almost 90 percent larger than the average for nonmarked cars. Comparing the second year of availability for 1987 models with the 1986 models second year also shows a much larger increase in the average loss payment per claim for parts-marked cars than for nonmarked car lines.

Average Loss Payment Per Insured Vehicle Year

The average loss payment per insured vehicle year reflects both the frequency of theft claims and the average loss payment per claim. In their first year of availability both parts-marked and nonmarked 1987 models registered declines in their average loss payment per insured vehicle year. The marked car lines continued to experience a decline in average loss payment per insured vehicle year in the first year of the 1988 models but the non-marked car lines were unchanged. Similarly, during the second year of the 1987 models, the parts-marked lines registered a small decline compared to the second year of 1986 models but the nonmarked car lines were unchanged. Overall, the parts-marked car lines registered larger declines

in average loss payment per insured vehicle year than did the nonmarked lines.

Theft Claim Distribution and Frequencies by Size of Claim

Table 2 gives the distribution of theft claims by size of claim for the nonmarked and parts-marked groups for 1986-88 model years. Theft claims less than $2,000 changed very little for either group from the 1986 to 1988 models. The nonmarked group had a significantly greater percentage of claims falling into this category, however. For the nonmarked vehicles only, one claim in seven was larger than $2,000; for the parts marked group about one claim in four was above $2,000. The middle category, claims in the $2,000 to $10,000 range, declined in relative size for both groups from 1986 to 1988. The highest category, claims greater than $10,000, was significantly larger for the parts-marked vehicles. Both groups experienced about the same one-third increase in the relative size of the large theft loss bracket between 1986 and 1988.

Claim size distributions fail to take into account the changing number of claims and vehicle years of exposure. To address this, Table 2 also contains theft claim frequencies by size of claim using the same three claim size groups described above. To facilitate comparisons, the results were indexed to 1986 equal to 100. Claim frequencies for lower cost claims declined by one-quarter for parts- marked cars between 1986 and 1988 but increased by 4 percent for the nonmarked group. The mid-range size claim frequencies ($2,000-$10,000) declined for both groups but more so for the parts-marked vehicles. Cars without parts marking experienced a large increase in high cost theft frequencies, but there was no change for the cars with parts marking.

Parts-marked cars registered declines in theft claim frequencies for all theft claims less than $10,000 and an unchanged frequency for claims greater than $10,000. Conversely, the nonmarked group had little change in the lower cost claim frequency, a decline in the mid-range, and a large increase in the frequency of large claims.

Losses by Rural-Urban Classification

A previous HLDI report (A-29) found that the theft experience for 1985-87 model cars was highly dependent on vehicle garaging location. That report used a U.S. Department of Agriculture population density classification system that placed each county in a rural-urban continuum. In general, as the degree of urbanization increased, so did theft claim frequency and average loss payment per insured vehicle year.

Table 2
Theft Claim Distribution and Claim Frequency Index
By Size of Claim: 1986-88 Vehicle Series

	Cars Without Parts Marking			Cars With Parts Marking*		
	Size of Claim			Size of Claim		
Model Year	<$2,000	$2,000-10,0000	>$10,000	<$2,000	$2,000-10,0000	>$10,000
	Percent Distribution of Theft Claims					
1986	(84.4)	(11.0)	(4.7)	(73.6)	(16.1)	(10.4)
1987	(85.4)	(9.0)	(5.6)	(73.1)	(14.5)	(12.4)
1988	(86.6)	(7.4)	(6.1)	(74.5)	(11.6)	(13.8)
	Theft Claim Frequencies					
1986	7.86	1.02	0.44	8.84	1.92	1.25
1987	8.23	0.87	0.54	8.05	1.60	1.37
1988	8.17	0.70	0.57	6.70	1.05	1.24
	Theft Claim Frequency Index (1986 = 100)					
1986	100	100	100	100	100	100
1987	105	85	123	91	83	109
1988	104	69	132	76	54	100

* Parts-marking began with the 1987 models.

In Table 3, the same classification scheme was used to present theft losses relative to parts-marked vehicles in the areas most affected by automobile thefts, that is high density urban areas with more than 1,000,000 population. (See Appendix C for definitions and codes; areas define as "0" or "1" are termed metropolitan areas in this study.) These large metropolitan areas account for a little over one-half of the overall exposure. Table 4 presents similar theft loss data for the remainder of the United States, that is the counties not contained in large metropolitan areas (codes 2-9 in Appendix C). It should be noted that the HLDI data base assigns vehicles geographically to garaging location and not to the location where the theft loss was incurred. The exposure results presented in Tables 3 and 4 indicate that a slightly higher percentage of the cars with parts marking than of the nonmarked cars are garaged in the large metropolitan areas.

Vehicles In Large Metropolitan Areas

Theft Claim Frequency

As shown in Table 3, theft claim frequencies for both parts-marked and nonmarked car lines were significantly higher in the large metropolitan areas than for the nation overall. For the first year of 1987 model availability in the large metropolitan areas, theft claim frequencies for parts-marked vehicles declined by more than 16 percent and nonmarked vehicles registered a 14 percent drop. Both declines were substantially larger than the overall declines noted earlier. In the second year of 1987 model availability, the parts-marked cars again posted a sharp decline in contrast to a marginal decrease in the nonmarked lines. For the first year of availability of the 1988 models, the parts-marked car lines' claim frequency was one-third lower than the 1986 models, which is a sharp contrast to the 3 percent decline in claim frequencies experienced by the nonmarked car lines. For the 1988 models, parts-marked lines have car theft claim frequencies substantially below the nonmarked cars. This is a dramatic reversal for the lines designated as high theft in 1986.

Average Loss Payment per Claim

The overall trends in average loss payment per claim for large metropolitan areas were similar to those for the nation as a whole but at much higher levels of loss. The average loss payment per claim for nonmarked cars in both first and second years of availability was little changed. However the parts-marked cars' average loss payment per claim increased

Table 3

Theft Results for Vehicles in Large Metropolitan Areas: 1986-88 Vehicle Series Subject to Parts Marking and Not Subject to Parts Marking By Year of Availability

	Cars Without Parts Marking			Cars With Parts Marking*		
	1986	1987	1988	1986	1987	1988
Claim Frequency						
Year 1	16.3	14.0	15.8	19.4	16.2	13.1
Year 2	15.6	15.3		18.6	16.0	
Average Loss Payment ($)						
Year 1	1,772	1,738	1,780	3,096	2,881	4,019
Year 2	1,753	1,813		2,985	3,515	
Average Loss Payment Per Insured Vehicle Year ($)						
Year 1	29	24	28	60	47	53
Year 2	27	28		55	56	
Percent of Total Exposure						
Year 1	51.9	53.5	51.9	55.2	56.6	54.3
Year 2	51.3	51.6		53.8	54.2	

* Parts-marking began with the 1987 models.

Results are standard to the following distribution: Theft coverage with no deductible amount, 5 percent youthful operators and 50 percent no-youthful operators; for coverage with a deductible amount, 5 percent youthful operators and 40 percent no-youthful operators.

Table 4

Theft Results for Vehicles Outside Large Metropolitan Areas: 1986-88 Vehicle Series Subject to Parts Marking and Not Subject to Parts Marking By Year of Availability

	Cars Without Parts Marking			Cars With Parts Marking*		
	1986	1987	1988	1986	1987	1988
Claim Frequency						
Year 1	7.0	6.7	7.3	8.8	8.4	8.1
Year 2	7.3	7.6		9.5	9.1	
Average Loss Payment ($)						
Year 1	1,278	1,194	1,630	2,406	2,274	2,308
Year 2	1,252	1,272		2,265	2,504	
Average Loss Payment Per Insured Vehicle Year ($)						
Year 1	9	8	12	21	19	19
Year 2	9	10		22	23	
Percent of Total Exposure						
Year 1	48.1	46.5	48.1	44.8	43.4	45.7
Year 2	48.7	48.4		46.2	45.8	

* Parts-marking began with 1987 models.

Results are standard to the following distribution: Theft coverage with no deductible amount, 5 percent youthful operators and 50 percent no-youthful operators; for coverage with a deductible amount, 5 percent youthful operators and 40 percent no-youthful operators.

substantially over the period. For the first year of availability, the average loss payment per claim increased by almost one-third between 1986 and 1988 models. Similarly, in the second year of availability for the 1987 models as compared to the second year for the 1986 models there was an increase of about 18 percent.

Average Loss Payment per Insured Vehicle Year

Average loss payments per insured vehicle year for the large metropolitan areas were approximately double the levels registered for the entire nation for both marked and nonmarked lines. As was the case for the country as a whole, average loss payments per insured vehicle year for both groups declined during the first year of 1987 model availability. During the second year, both groups registered slight increases. The 1988 models' average loss payment per insured vehicle year for parts-marked vehicles was about 12 percent lower than for the 1986 models, but there was virtually no change for the nonmarked cars.

Vehicles Outside Large Metropolitan Areas

Theft Claim Frequency

The overall frequency of theft claims shown in Table 4 for the counties not contained in metropolitan areas of one million or more population was roughly one-half that of the urban areas. The pattern of substantial declines in theft claim frequencies for parts-marked vehicles found in the large urban areas was repeated in the balance of the nation as well. Frequencies declined for both groups of cars in the first year of 1987 model availability. In the second year of availability, the marked car lines had lower claim frequencies and the nonmarked group registered increased claim frequencies. The 1988 models of parts-marked cars experienced an eight percent decline compared to the 1986 models, but the nonmarked group registered a four percent increase in claim frequencies.

Average Loss Payment Per Claim

The average loss payment per claim for the nonurban areas was about three-fourths that reported in the large metropolitan areas. For the 1987 models in their first year both car groups experienced a decline in average loss payments per claim. However, in their second year of availability, the parts-marked car lines had more than a 10 percent increase as compared to a 2 percent increase for the nonmarked group. For the 1988 models as compared to the 1986 models, the nonmarked car lines' average loss payment per claim increased by 28 percent and the parts-marked group declined by 4 percent.

Average Loss Payment per Insured Vehicle Year

For the counties not in large metropolitan areas, average loss payments per insured vehicle year were about one-third the levels recorded in the large metropolitan counties and trends were similar. Both parts-marked and nonmarked 1987 models initially recorded declines followed in the second year of availability with increased average loss payments per insured vehicle year. For the 1988 models compared to the 1986 models, there was a 33 percent increase for the nonmarked group and a 10 percent decline for the parts-marked lines. The large change in the nonmarked group was caused by increases in both theft claim frequency and average loss payment per claim.

Effect of Deductible Amounts

The comprehensive portion of automobile insurance covering theft losses is typically available with and without a deductible. Table 5 presents the percentage of total HLDI exposure with a comprehensive coverage deductible and the percentage with no deductible. A major shift over time in either the parts-marked car lines or the nonmarked vehicles from one deductible category to the other could influence both the frequency of theft claims and the average loss payment per theft claim. Although, as shown in Table 5, no large shifts have taken place, there is a trend toward increasing percentages of deductible exposure evidenced in both groups. This change has taken place at about the same rate for both groups and therefore is unlikely to affect comparisons of parts-marked and nonmarked car lines. The percentage of exposure with a comprehensive deductible is essentially the same for both parts-marked and nonmarked groups.

Table 5
1986-88 Vehicle Series Subject to Parts Marking and Not Subject to Parts Marking; Percent of Exposure By Deductible Category

	Cars Without Parts Marking		Cars With Parts Marking	
Year	No Deductible	With Deductible	No Deductible	With Deductible
1988	37%	63%	36%	64%
1987	39	61	38	62
1986	41	59	38	62

Parts-marking began with the 1987 models.

Appendix A-1

Car Lines Complying With Parts Marking Rule

Manufacturer	Series
BMW	3-Series, 5-Series, 6-Series, and 7-Series
Chrysler Corp.	Chrysler Executive Sedan/Limousine, Chrysler Fifth Avenue/Newport, Chrysler Laser, Chrysler LeBaron/Town& Country, Chrysler LeBaron GTS, Dodge Aries, Dodge Daytona, Dodge Diplomat, Dodge Lancer, Doge 600, Plymouth Caravelle, Plymouth Gran Fury, Plymouth Reliant, and Q Car.
Ferrari	Mondial 8, 308, and 328
Ford Motor Co.	Ford Mustang, Ford Thunderbird, Mercury Capri, Mercury Cougar, Lincoln Continental, Lincoln Mark, Lincoln Town Car, Merkur Scorpio, and Merkur XR4Ti
General Motors	Buick Electra, Buick LeSabre, Buick Riviera, Cadillac DeVille, Cadillac Eldorado, Cadillac Seville, Chevrolet Camaro, Chevrolet Nova, Oldsmobile Delta 88, Oldsmobile 98, Oldsmobile Toronado, Pontiac Bonneville, Pontiac Fiero, and Pontiac Firebird.
Honda	Acura Legend
Jaguar	XJ, XJ-6, and XJ-40
Maserati	Biturbo, and Quattroporte
Mazda	GLC, and 626
Mercedes-Benz	190 D/E, 260 E 300 D/E, 300 TD, 300 SDL, 380 SEC/500 SEC, 380 SEL/500 SEL, 380 SL, 420 SEL, 560 SEL, 560 SEC, 560 SL
Mitsubishi	Cordia and Tredia
Porsche	911 and 928
Reliant	SSI
Saab	900 and 9000
Subaru	XT
Toyota	Camry, Celica, Corolla/Corolla Sport, MR2, and Starlet
Volkswagen	Audi Quattro, Volkswagen Cabriolet, Volkswagen Rabbit, and Volkswagen Scirocco.

Appendix A-2

High-Theft Car Lines Exempt from Parts-Marking for 1987 Models

Manufacturer	Series
Alfa Romeo	Milano
Austin Rover	Sterling
Chrysler	Conquest
Cadillac	Allante
Chevrolet	Corvette
Isuzu	Impulse
Mazda	RX-7
Mitsubishi	Galant, Starion
Nissan	Maxima, 300ZX
Porsche	924S
Toyota	Celica Supra, Cressida
Volkswagen	Audi 5000S

Note: Car lines as designated by NHTSA in 51 FR 42577, November 25, 1986.

Appendix B

Definitions

Average Loss Payment per Claim -- The total of all loss payments made for the claims for a group of vehicles, divided by the number of claims paid.

Average Loss Payment per Insured Vehicle Year -- For a group of vehicles, the product of Claim Frequency and Average Loss Payment per Claim, expressed as dollars per insured vehicles, the product of Claim Frequency and Average Loss payment per Claim, expressed as dollars per insured vehicle year. *It should be noted that this definition differs from the commonly used insurance term, pure premium, but yields similar results.*

Claim Frequency -- The number of claims for a group of vehicles, divided by the exposure for that group.

Deductible Amount -- That portion of the theft loss borne by the policyholder.

Exposure -- The time interval an individual vehicle is insured. Exposure for a group of vehicles is expressed in units of insured vehicle years.

Loss Payment -- That portion of the theft loss borne by the insurer; in general, the total theft loss minus the deductible amount.

Operator Age Group -- The factor which distinguishes those vehicles whose rated driver is youthful from those vehicles whose rated driver is not youthful *(see Youthful Operator)*.

Rated Driver -- The driver who, for insurance purposes, is considered to represent the greatest loss potential for the insured vehicle.

Theft Coverages -- The coverage under which people insure their own car against loss caused by partial or total theft.

Vehicle Series -- A name denoting a family of vehicles, within a make, with the same wheelbase and a degree of commonality in construction such as body, chassis, etc.

Youthful Operator -- For the purposes of this report, all males (married or single) under 25 years of age and all unmarried females under 25 years of age.

Appendix C

U.S. Department of Agriculture
Rural-Urban Continuum Classification System

Code	
	Metropolitan Counties
0	Central counties of metropolitan areas of 1 million population or more
1	Fringe counties of metropolitan areas of 1 million population or more
2	Counties in metropolitan areas of 250,000 to 1 million population
3	Counties in metropolitan areas of less than 250,000 population
	Nonmetropolitan Counties
4	Urban population of 20,000 or more, adjacent to metropolitan area
5	Urban population of 20,000 or more, not adjacent to a metropolitan area
6	Urban population of less than 20,000, adjacent to a metropolitan area
7	Urban population of less than 20,000, not adjacent to a metropolitan area
8	Completely rural, adjacent to a metropolitan area
9	Completely rural, not adjacent to a metropolitan area

Note: Metropolitan status is that announced by the Office of Management and Budget in June 1983, when the current population criteria were first applied to results of the 1980 Census. Adjacency was determined by the physical boundary adjacency and a finding that at least 2 percent of the employed labor force in the nonmetropolitan county commuted to metropolitan central counties.

Prepared in Economic Development Division, Economic Research Service, USDA.

Selected Publications

R88-2 *Insurance Collision Report, Passenger Cars, Vans, Pickups, and Utility Vehicles, 1988 Models During Their First Year, 1987 Models During their First Two years, 1986 Models During Their First Three Years,* December 1988.

R89-1 *Insurance Collision Report, Initial Results for 1989 Automobiles,* August 1989.

I88-1 *Insurance Injury Report, Passenger Cars, Vans, Pickups, and Utility Vehicles; 1986-1988 Models,* September 1989.

T88-1 *Insurance Theft Report; Passenger Cars, Vans, Pickups, and Utility Vehicles: 1988 Models During Their First Year, 1987 Models During Their First Two Years, 1986 Models During Their First Three Years,* May 1989.

A-5 *Automobile Insurance Losses, Collision Coverages; Relationships Between Losses and Vehicle Body Style, 1974 and 1975 Models,* December 1975.

A-7 *Automobile Insurance Losses, Collision Coverages; Annual Increases and Seasonal Variations 1972, 1973, 1974 and 1975 Models,* June 1976.

A-9 *Automobile Insurance Losses, Collision Coverage; A Comparison of Collision Claim Size Distributions for 1974-76 Models,* November 1977.

A-11 *Automobile Insurance Losses, Collision Coverage; The Consistency of the Loss Experience of Specific Vehicles Produced in Several Years, 1975 to 1978 Models,* June 1979.

A-12 *Automobile Insurance Losses, Collision Coverage; An Assessment of the Effects of the Federal Safety Bumper Standard on the Losses for 1972 Through 1978 Models,* June 1980.

A-13 *Automobile Insurance Losses, Personal Injury Protection and Collision Coverage; The Effects of Car Size on Crash Losses, 1977-1980 Models,* May 1981.

A-14 *Automobile Insurance Losses, Personal Injury Protection and Collision Coverage; Comparisons of the Loss Experience of Two- and Four-Door Cars, 1978, 1979, and 1980 Models,* May 1981.

A-16 *Automobile Insurance Losses, Collision Coverages; The Frequency of Claims Involving Salvage; Subcompact and Compact Cars; 1980 Models,* January 1982.

A-17 *Insurance Losses, Comprehensive Coverage; Non-Crash Fire Losses; 1979-1980 Models,* February 1982.

A-18 *Insurance Losses, Theft Coverage; The Distribution of Theft Loss Payment Amounts; Passenger Cars, Vans, Pickups, and Utility Vehicles; 1981 Models During Their First Year, 1980 Models During Their First Two Years, 1979 Models During Their First Three Years,* June 1982.

A-19 *Insurance Losses, Theft Coverages; A Comparison of the Theft Loss Experience of General Motors Passenger Cars With and Without Factory-Installed Theft Deterrent Systems; 1980-1981 Models,* January 1983.

A-20 *Insurance Losses, Collision Coverages, A Comparison of the Collision Loss Experience of Subaru Models with 5 and 2.5 MPH Bumpers,* April 1983.

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A-26 *Consistency of Model Year Injury Claim Frequency Results for Selected 1981-1983 Models,* May 1986.

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A-28 *Insurance Injury Loss Experience in Eight States with Seat Belt Laws, 1983-86 Models,* July 1988.

A-29 *Insurance Losses Based on Garaging Location, 1985-87 Models,* June 1988.

A-30 *Automobile Insurance Losses, A Comparison of California and National Results,* May 1988.

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